UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/676,481	09/30/2003	Feng Jin	42P17237	7521

8791   7590   01/10/2008

BLAKELY SOKOLOFF TAYLOR & ZAFMAN
1279 OAKMEAD PARKWAY
SUNNYVALE, CA 94085-4040

EXAMINER
ARCOS, CAROLINE H

ART UNIT	PAPER NUMBER
2195	

MAIL DATE	DELIVERY MODE
01/10/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on _22 October 2007_.

2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) _1,4-6,8-14,16-18,20-21, 24-26 and 28-30_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) _1,4-6,8-14,16-18,20-21, 24-26 and 28-308_ is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on _9/30/2003_ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _10/22/2007_.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

1. 1, 4-6, 8-14, 16-18, 20-21, 24-26 and 28-30 are pending . .

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 18 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for

failing to particularly point out and distinctly claim the subject matter which applicant

regards as the invention.

   a.   The claim language in the following claims is not clearly understood:

   i.   As per claim 18, line 1, it is not clearly understood whether "the

first processor" is the same as "a first application processor" of claim 17 (i.e. if it is

the same it should be referred to as the first application processor).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3.   Claim 1, 4-6, 9-14, 16-18, 21, 24-26 and 29-30 are rejected under 35 U.S.C.

103(a) as being unpatentable over Collins (US, 6,158,000), in view of Khanna et al.

(Khanna) (US 2003/0056090 A1).

4.   As per claim 1, Collins teaches the invention substantially including a method

comprising: building a queue having one or more drivers for execution prior to booting

an operating system (abs. , lines 12-14; col.1, lines 54-60; col. 2, lines 42-44) ; and

         executing the one or more drivers in the queue using a plurality of processors, the

plurality of processors including a bootstrap processor and one or more application

processors (col.3, lines 49-56), wherein the execution of drivers by each of the plurality

of processors includes:

              determining whether there is a first driver of the one or more drivers in

the queue,

              determining whether the first driver is ready for execution and if the first

driver is ready for execution, executing the first driver (col. 1, lines 54-57; col.2, lines 44-

46).

5.   Collins did not teach removing the first driver from the queue. However, Khanna

teaches that removing the first driver from the queue (Fig.4, 415,425). It would have been

obvious to one of ordinary skill in the art at the time of the invention was made to

combine the teaching of Collins and Khanna's because Khanna's teaching of removing

the first driver that is ready for execution from the queue would improve the accuracy of

the driver list and the efficiency of the system by keeping the driver list always updated.

6.   As per claim 4, Collins teaches that if a first application processor of the one or
more application processors determines that there are no drivers left in the queue, the first
application processor goes to an idle state (Fig.3, 342; col.8, lines 43-44).

7.   As per claim 5, Collins teaches that if the bootstrap processor determines there are
no drivers left in the queue, the bootstrap processor:

waits until all other processors in the plurality of processors are in an idle state;
and

boots an operating system (Col.3, lines 56-60).

8.   As per claim 6, Collins teaches that the plurality of processors includes one or
more logical processors (abs, lines 4-6).

9.   As per claim 9, Collins teaches that the plurality of drivers are executed in order
(col.1, lines 54-56; col.2, lines 42-44).

10.   As per claim 10, Collins did not specifically teach that a first driver in the queue
that has a dependency on a second driver in the queue is not executed until the second
driver has been executed. However, Khanna teaches that a first driver in the queue that
has a dependency on a second driver in the queue is not executed until the second driver
has been executed (abs, lines 6-10; Par. [0032]).

11.   As per claim 11 Collins teaches a processor comprising: an execution unit; and a

first logical processor and a second logical processor, the first logical processor and the

second logical processor utilizing the execution unit (abs, lines 1-6); the first logical

processor to build a queue having one or more drivers to be executed prior to booting an

operating system (abs, lines 10-18; col.3, lines 49-56) ; and

the first logical processor and the second logical processor to execute the one or more

drivers in the queue in parallel at least in part (abs, lines 1-3; col.3, lines 60-63), wherein

the execution of drivers includes:

determining whether there is a first driver of the one or more drivers in the queue,

determining whether the first driver is ready for execution, and

if the first driver is ready for execution, executing the first driver (col. 1, lines 54-

57; col.2, lines 44-46).

12.   Collins did not teach removing the first driver from the queue. However, Khanna

teaches that removing the first driver from the queue (Fig.4, 415,425).

13.   As per claim 12, Collins teaches if the second logical processor determines there

are no drivers left in the queue, the second logical processor is to enter an idle state

(Fig.3, 342; col.8, lines 43-44).

14.   As per claim 13, Collins teaches if the first logical processor determines there are

no drivers left in the queue, the first logical processor is to: wait until the second

processor is in an idle state; and boot the operating system (Col.3, lines 56-60).

15.   As per claim 14, Collins teaches that the processor operates concurrently with one

or more other processors (abs, lines 1-3; col.3, lines 60-63).

16.   As per claim 16, Collins teaches a system comprising:

        a bootstrap processor ;

        one or more application processors (Abs, lines 3-6) ;

        a bus, the bootstrap processor and the one or more application processors being

coupled to the bus; and

        a flash memory coupled to the bus (col.3, lines 47-49);

        wherein prior to the booting of an operating system for the system the bootstrap

processor and the one or more application processors execute a plurality of drivers in a

queue in parallel at least in part (abs, lines 1-3; col.3, lines 60-63), the execution of the

drivers by the bootstrap processor and each of the one or more application processors

including:

        determining whether there is a first driver of the plurality of drivers in the queue

to be executed,

        determining whether the first driver is ready for execution, and if the first driver is

ready for execution and executing the first driver(col. 1, lines 54-57; col.2, lines 44-46).

17.   Collins did not teach removing the first driver from the queue. However, Khanna

teaches that removing the first driver from the queue (Fig.4, 415,425).

18.   As per claim 17, Collins teaches that The system of claim 16, wherein if a first

application processor of the one or more application processors determines that there are

no drivers left in the queue, the first application processor is to enter an idle state (Fig.3,

342; col.8, lines 43-44).

19.   As per claim 18, Collins teaches that if the first processor determines there are no

drivers left in the queue, the first processor is to: wait until all of the one or more

application processors are in an idle state; and boot the operating system (Col.3, lines 56-

60).

20.   As per claim 21, Collins teaches a computer-readable medium having stored

thereon data representing sequences of instructions that, when executed by a processor,

cause the processor to perform operations (col.1, lines 54-60) comprising:

        building a queue having one or more drivers to be executing prior to booting of an

operating system (abs, lines 14-18; col.3, lines 49-56); and

         executing the one or more drivers in the queue using a plurality of processors, the

plurality of processors including a bootstrap processor and one or more application

processors (abs, lines 4-6), wherein the execution of drivers by each of the plurality of

processors includes:

        determining whether there is a first driver of the plurality of drivers in the queue,

        determining whether the first driver is ready for execution, and if the first driver is

ready for execution and executing the first driver(col. 1, lines 54-57; col.2, lines 44-46).

21.   Collins did not teach removing the first driver from the queue. However, Khanna

teaches that removing the first driver from the queue (Fig.4, 415,425).

22.   As per claim 24, it is the medium claim of the method claim 4. Therefore, it is

rejected under the same rational as claim 4.

23.   As per claim 25, it is the medium claim of the method claim 5. Therefore, it is

rejected under the same rational as claim 5.

24.   As per claim 26, it is the medium claim of the method claim 6. Therefore, it is

rejected under the same rational as claim 6.

25.   As per claim 29, it is the medium claim of the method claim 9. Therefore, it is

rejected under the same rational as claim 9.

26.   As per claim 30, it is the medium claim of the method claim 10. Therefore, it is

rejected under the same rational as claim 10.

27.   Claims 8,20 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Collins (US, 6,158,000), in view of Khanna et al. (Khanna) (US 2003/0056090 A1), and

further in view of Rothman (US 2004/0088531 A1).

28.   As per claim 8, the combined teaching of Collins and Khanna did not teach that each of the plurality of the drivers is compatible with an extensible firmware interface (EFI) specification. However, Rothman teaches that each of the plurality of the drivers is compatible with an extensible firmware interface (EFI) specification (Par. [0017], lines 1-4; Par. [0023], lines 11-15).

29.   It would have been obvious to one or ordinary skill in the art at the time the invention was made to have combined the teachings of Collins, Khanna and Rothman because Rothman's teaching of driver compatibility with and EFI improving the system by enhancing platform compatibility to create support for any new device type during the boot process.

30.   As per claim 20, Rothman teaches that each of the plurality of drivers is compatible with an extensible firmware interface (EFI) specification (Par. [0017], lines 1-4; Par. [0023], lines 11-15).

31.   As per claim 28, it is the medium claim of the method claim 8. Therefore, it is rejected under the same rational as claim 8.

Response to Amendment

32.   Claims 2-3, 7, 15, 22-23 and 27 are cancelled.

33.   Amendment to specification is accepted by examiner.

34.   Claim objection has been withdrawn by examiner.

Response to Arguments

35.   Applicant's arguments with respect to claims 1, 4-6, 8-14, 16-18, 20-21, 24-26,

and 28-30 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

36.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

(US 5,854,905) teach extensible BIOS for boot support of devices.

37.   Applicant's amendment necessitated the new ground (s) of rejection presented in

this office action. Accordingly, **THIS ACTION IS MADE FINAL.** Applicant is

reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

38.   A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the

advisory action. In no event, however, will the statutory period for reply expire later than

SIX MONTHS from the mailing date of this final action.

39.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Caroline Arcos whose telephone number is 571-270-3151.

The examiner can normally be reached on Monday-Thursday 7:00 AM to 5:30 PM.

40.   If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Meng-Ai An can be reached on 571-272-3756. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

41.   Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR. Status

information for unpublished applications is available through Private PAIR only. For

more information about the PAIR system, see http://pair-direct.uspto.gov. Should you

have questions on access to the Private PAIR system, contact the Electronic Business

Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO

Customer Service Representative or access to the automated information system, call

800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Patent Examiner
Caroline Arcos

MENG-AI T. AN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100